A NEW MUSCOID PARASITE REARED FROM BEETLES IN CALIFORNIA[1]

(Diptera)

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The species described below is an interesting addition to the list of *Sarcophaga* forms whose biologic relationships with beetle hosts have been definitely established through rearings. I am indebted to Dr. E. Gorton Linsley for the privilege of studying the present material, all reared from *Thyce sanfordi* Casey. Types of the new species are deposited in the California Academy of Sciences collection.

Sarcophaga thyceae Reinhard, new species

Related to *S.* (*Acanthodotheca*) *prohibita* Aldrich, but at once distinguished by the much wider front, larger palpi, presence of orbitals and outer verticals in the female; also, there are well marked genitalic differences in both sexes.

Female. Front at vertex 0.32 of head width (average of four specimens, 0.33; 0.31; 0.30; 0.32), widening but slightly toward antennal base; parafrontals and parafacials usually silvery gray, latter with one or more rows of black hairs on outer margin extending to lower extremity; frontal vitta black, much wider than parafrontal on entire length; inner and outer verticals well developed, erect; proclinate orbitals two pairs; ocellars moderately large; frontal rows strongly divergent beneath base of antennae and extending to or below middle of second segment; epistoma short, equal clypeal width and slightly bowed forward from plane of same; vibrissae stout, on oral margin; facial ridges bearing a few bristly hairs on lower extremity; antennae mostly black, third segment barely twice length of second and reaching almost to oral margin; arista longer than antenna, long plumose to middle or slightly beyond; cheek gray pollinose, nearly two-fifths eye height; palpi yellow, slender nearly to middle thence strongly swollen and tapering apically to pointed tip; proboscis short; back of head gray pollinose, moderately clothed with pale pile and two rows of black bristly hairs above.

Thorax gray pollinose with the usual 3-5 black dorsal vittae. Chaetotaxy: acrostical 3,1 (rather weak except prescutellar pair);

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dorsocentral 3,3; intraalar 3 (front small); posthumeral 1; humeral 3; notopleural 4; postalar 2; sternopleural 3; scutellum with 2 lateral, 0 apical and 1 preapical pair; prosternum bare; sides of postnotum beneath calypters setose; propleura usually bare but sometimes with a few setae on anterior edge; calypters opaque, white.

Abdomen slightly elongated, black, gray pollinose and strongly tessellated above with a constant median black vitta extending almost to hind margin of fourth segment, which is reddish in ground color; all dorsal bristles reduced in size to weak or barely differentiated bristly hairs; one median marginal pair on third segment and a marginal row on fourth; genitalia red; first segment bare and shiny above, transversely grooved shortly before hind margin and more deeply so at sides, the latter somewhat swollen or inflated between groove and basal margin, hind edge of segment with a fringe of fine black hairs; anal orifice rather large and strongly arched above; larvipositor retracted, blunt-tipped, with the lateral apical lobes clothed with short black hairs.

Legs black, moderately stout; mid tibia with two bristles on outer front side near middle; claws and pulvilli normal in size.

Wings gray hyaline; first vein bare, third setulose halfway or more to small cross vein; first posterior cell open well before wing tip; costal spine nearly one-half length of small cross vein; epaulet black, subepaulet pale yellow.

Male. Front at vertex 0.22 of head width (average of four specimens, 0.21; 0.22; 0.23; 0.23), narrowed before triangle thence widening rapidly to antennae; parafrontals and parafacials silvery with a decided yellow tinge; orbitals and outer verticals absent; palpi ordinary in size and but slightly thickened apically; cheek about one-third eye height. Thoracic chaetotaxy as in female but good-sized decussate apical scutellars present and the bristles on abdomen normal in size; third segment bearing a median marginal pair and a marginal row of 8 to 10 on anal segment. Hypopygium reddish yellow; first segment dusted with pollen and slightly infuscated dorsally, with about 8 slender bristles on hind margin; second segment subglobose, clothed with longish erect black hairs on entire shiny surface above; forceps moderately long, dark brown, in profile rather thin and gently bowed, beset with minute stubby spines apically on hind side; in rear view the forceps are flat and rather broad, divided except at base but not divergent, with apex of each prong obliquely narrowed outwardly; penis with a rather short yellowish basal segment; second segment longer, shiny brown, convex behind and widened distally with each lateral extremity terminating in a minute bowed hook, the apex between latter broadly and deeply emarginate bearing a pair of recurved divergent hooks on hind side and a rather large subquadrate lobe in front, latter flattened or slightly concave on apical surface with the ventral edge terminating in a curved lip, which bears a small roundish transparent flap on either side; claspers tapered to

pointed curved tips, hind pair moderately long, front ones short with broad base bearing several long hairs on hind side; accessory plate longer than wide, narrowed tip with sparse long hairs; lobes of fifth sternite thickly covered with black spiny hairs and each bearing a shiny concave pad on inner margin near base. Middle femur with comb; hind tibiae not villous; claws and pulvilli longer than last tarsal segment.

Length, 8.5 - 11 mm.

Holotype female (No. 5443, Mus. Calif. Acad. Sci., Ent.), and *allotype* male (No. 5444), SAN JOSE, CALIFORNIA, July 25, 1941, and August 1, 1942, reared from *Thyce sanfordi* Csy. (E. G. Linsley and L. M. Smith). *Paratypes*: 4 males and 8 females, same data as type.

AUTOGRAPHA EGENA (GUEN.) A PERIODIC PEST OF BEANS IN CALIFORNIA

Autographa egena (Guen.) (Lepidoptera: Phalaenidae) was observed during October, 1943, at Salinas, Monterey County, California, where the caterpillars fed on the leaves and green pods and seeds of beans, especially the pole types. In certain instances the damage was so severe that almost complete defoliation of the plants resulted. During July, 1936, a previous outbreak of this insect was noted at Half Moon Bay, California, at which time the caterpillars damaged a white Kentucky Wonder pole bean. At Salinas the larvae pupated during November, rolling the leaves and transforming within a silken cocoon. Adults emerged in December, 1943, and again in May, 1944. Several generations occur during a single year. Four parasites of the larvae were found. A count made of caterpillars collected during August, 1943, indicated the relative per cent of parasitism as follows: *Copidosoma* probably *truncatellum* (Dalm.) (det. A. B. Gahan), 14 per cent; "*Amblyteles*" *montanus* (Cr.) (det. H. K. Townes), 1 per cent; "*Ephialtes*" *sanguineipes* (Cr.) (det. H. K. Townes), 1 per cent; and *Chaetogaedia monticola* (Big.) (det. M. T. James), 3 per cent. In addition to these parasites a fungus killed 2 per cent of the larvae and 2 per cent failed to emerge for unknown reasons. The adult moth was kindly determined by Carl Heinrich.—W. HARRY LANGE, JR.